## Rec'd PST/PTO 03 JUN 2005

## INTERNATIONAL SEARCH REPORT

International application No. PCT/JP03/11848

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|---|--|---|-----------------------|--|--|
| A. CLASS<br>Int.  | CIFICATION OF SUBJECT MATTER C1 <sup>7</sup> C23C16/18, C07C11/12, C07C  | :13/263, C07C53/124, C0   | 7C53/18               |  |  |
| According to  | o International Patent Classification (IPC) or to both na  | tional classification and IPC   |                       |  |  |
| B. FIELDS   | S SEARCHED   |   |                       |  |  |
| Minimum do<br>Int.  | ocumentation searched (classification system followed l<br>Cl <sup>7</sup> C23C16/18, C07C11/12, C07C  | by classification symbols)<br>:13/263, C07C53/124, C0   | 7C53/18               |  |  |
| Jitsu   | ion searched other than minimum documentation to the<br>1yo Shinan Koho 1922–1996<br>L Jitsuyo Shinan Koho 1971–2003   | Jitsuyo Shinan Toroku Koh   | o 1996-2003           |  |  |
|   | ata base consulted during the international search (nam ILE (STN)  | e of data base and, where practicable, sea  | rch terms used)       |  |  |
| C. DOCU   | MENTS CONSIDERED TO BE RELEVANT  |   |                       |  |  |
| Category*   | Citation of document, with indication, where ap  |   | Relevant to claim No. |  |  |
| Х .   | JP 2002-212112 A (Tanaka Kik Kabushiki Kaisha), 31 July, 2002 (31.07.02), Claims; Par. No. [0019]; tabl (Family: none)   | 1,2   |                       |  |  |
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| . A   | JP 2002-231656 A (Hitachi, L<br>16 August, 2002 (16.08.02),<br>Claim 11<br>& US 2002/102826 A1   | td.),   | 1,2                   |  |  |
| × Furth   | er documents are listed in the continuation of Box C.  | See patent family annex.  | ]                     |  |  |
| "A" docum conside "E" earlier date "L" docum cited to special "O" docum means "P" docum | l categories of cited documents: ent defining the general state of the art which is not cred to be of particular relevance document but published on or after the international filing ent which may throw doubts on priority claim(s) or which is destablish the publication date of another citation or other reason (as specified) ent referring to an oral disclosure, use, exhibition or other ent published prior to the international filing date but later | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art document member of the same patent family |                       |  |  |
| Date of the a   | e priority date claimed actual completion of the international search ecember, 2003 (09.12.03)   | Date of mailing of the international search report 24 December, 2003 (24.12.03)   |                       |  |  |
|   | nailing address of the ISA/ nese Patent Office   | Authorized officer  |                       |  |  |
| Facsimile No.   |  | Telephone No.   |                       |  |  |



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| ategory* | Citation of document, with indication, where appropriate, of the relevant passages  |      |        |   | Relevant to claim No. |     |
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| A        | JP 2002-145892 A (Tanaka Kabushiki Kaisha), 22 May, 2002 (22.05.02), Claims (Family: none)  |      |        | _ |                       | 1,2 |
| А        | EP 717451 A2 (NIPPON OIL<br>19 June, 1996 (19.06.96),<br>Page 9, lines 38 to 53<br>& JP 8-167728 A<br>Par. No. [0020]<br>& US 5620531 A | co., | LTD.), |   | ·                     | 1,2 |
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